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DIRECTORATE OF
SCIENCE & TECHNOLOGY

Scientific and Technical Intelligence Report

Soviet Scientific and Medical Manpower Through 1975

~~Secret~~

OSI-STIR/70-26
October 1970

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SOVIET SCIENTIFIC AND MEDICAL MANPOWER THROUGH 1975

Project Officer

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OSI-STIR/70-26
October 1970

CENTRAL INTELLIGENCE AGENCY
DIRECTORATE OF SCIENCE AND TECHNOLOGY
OFFICE OF SCIENTIFIC INTELLIGENCE

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PREFACE

Estimates of numbers and trends in Soviet scientific and medical manpower may be important aids in determining the scientific and technological threat posed by the USSR and in comparing its potential for scientific, economic, and military progress with that of the United States. This report is an attempt to estimate the numbers of Soviet scientists, physicians, and veterinarians based on Soviet released information. A report on Soviet engineering manpower was published in September 1969.

Official Soviet statistics on scientific workers provide the main sources for data on the number of scientists in the USSR. In Soviet usage the terms *science* and *scientific* refer to all branches of knowledge and inquiry. The term *scientific workers* as used in Soviet statistics includes workers and other qualified individuals in the natural and social sciences and in a number of additional specified professions. In this report only those Soviet scientific workers in fields classified as scientific according to common usage in the United States are counted as scientists. Thus Soviet announcements of the total numbers of scientists or scientific workers in the USSR in general do not coincide with the totals given in this report.

The medical manpower category as presented herein comprises veterinarians and physicians, including dentists. In the available Soviet statistical reports, physicians and veterinarians who are engaged in research and/or teaching are usually counted both as scientists and as members of their professional groups. Thus to the degree that physicians and veterinarians are engaged in research and teaching the estimates of medical manpower in this report are overstated. However, it is believed that the numbers of those in such dual categories are relatively small and do not significantly affect the trends and projections of either group. All annual figures used herein depict the status as of the end of the year specified.

Stringent efforts have been made to present comparable Soviet and US data. Soviet and US scientific specialties are similar but not identical and the Soviet and US groups are therefore not entirely comparable. Differences in the compilation and use of statistics add further to the complexity of the comparisons, but in general the figures are believed to be relatively accurate.

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Specialists of the Bureau of Labor Statistics, the Census Bureau, and the National Science Foundation have contributed to this study by furnishing data on US scientific and medical manpower. They have also been consulted on projection techniques. This report was prepared by the Office of Scientific Intelligence with contributions from the Office of Economic Research. It was coordinated with the Directorate of Intelligence. The cutoff date of information is July 1970.

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SOVIET SCIENTIFIC AND MEDICAL MANPOWER THROUGH 1975

PROBLEM

To estimate the numerical strength of Soviet scientific and medical manpower through 1975.

SUMMARY AND CONCLUSIONS

The Soviet Union has fewer scientists but more physicians and more veterinarians than the United States and this situation is likely to continue through 1975. In 1968 (the latest year for which figures are available) there were about 263,000 scientists, 618,000 physicians, and 70,000 veterinarians in the USSR. It is estimated that by 1975 there will be about 369,000 Soviet scientists, 840,000 physicians, and 88,000 veterinarians, increases in 7 years of about 40%, 35%, and 25% respectively. In contrast the United States in 1975 is expected to have about 594,000 scientists, 503,000 physicians, and 26,000 veterinarians, increases in 7 years of about 28%, 27%, and 13% respectively. The number of Soviet physicians per thousand of population in 1968 was 2.6 and in 1975 will be 3.3; corresponding US figures are 2.0 and 2.3.

In the period through 1975 Soviet scientific manpower is expected to experience the largest growth, as well as the greatest percentage increase, in the physics and mathematics specialty, followed by the chemistry specialty. The 1968 published figures and the 1975 projected figures on Soviets with the equivalent of the US Bachelor of Science degree and US scientists with the Bachelor degree are shown in table 1.

Soviet holders of advanced degrees in science (doctors and candidates of sciences) were about 50,000 in 1958, 101,000 in 1968, and are projected to reach about 141,000 in 1975. Of the 1975 figure, approximately 123,000, or about 33%, will hold the candidate degree (approximately equivalent to the

Table 1

Number of USSR and US Scientists by Major Fields, 1968 and 1975

Major fields	USSR		US	
	1968	1975	1968	1975
Physicists and Mathematicians	83,000	123,000	108,000	148,000
Chemists	41,700	60,000	127,700	169,000
Medical and Pharmaceutical Scientists	44,600	56,000	53,000	67,000
Biologists	34,100	48,000	65,100	89,000
Agricultural and Veterinary Scientists	33,300	45,000	78,600	89,000
Geologists and Mineralogists	19,300	28,000	26,000	28,000
Geographers	6,600	8,000	3,900	5,000

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US Ph.D.) and 17,000, or about 5%, will hold doctorates (a higher degree than the US Ph.D.). The greatest percentage increase in advanced degrees projected during the 1968-1975 period is in physics and mathematics, followed by biology and then by geology and mineralogy.

By 1975 the numbers of Soviet holders of advanced degrees should be approximately as follows: 34,000 in the medical and pharmaceutical sciences, 31,000 in physics and mathematics, 24,000 in biology, 19,000 in the agricultural and veterinary sciences, 17,000 in chemistry, 11,000 in geology and mineralogy, and 3,000 in geography.

The greatest number of doctorates in the scientific disciplines in 1975 will be about 6,000 in the medical and pharmaceutical sciences, followed by 3,000 in physics and mathematics, and 3,000 in biology.

The Soviet Union had 388,000 physicians in 1958, 618,000 in 1968, and will have an estimated 840,000 in 1975, an increase of 36% in the 1968-1975 period. The largest categories in 1975 will be general practitioners, 164,000, followed by 89,000 pediatricians, 85,000 surgeons, 70,000 dentists, 52,000 obstetricians and gynecologists, and 50,000 epidemiologists and environmental health specialists.

DISCUSSION

SOVIET SCIENTIFIC MANPOWER

The Soviets define *scientific workers* (nauchnyye rabotniki) as comprising the following individuals:

> Academicians who are full or corresponding members of an academy of sciences; all persons who have an academic degree of doctor or candidate of science, or an academic title of professor, docent, senior research associate, junior research associate, or assistant, regardless of the place or character of their work; persons conducting scientific-research work in scientific institutions and scientific-pedagogical work in higher educational institutions, regardless of degree or academic title; and specialists who do not have an advanced degree or academic title but are doing scientific work in industrial enterprises and design organizations.[1]

Specialists without degree or title (but usually with diploma—the Soviets do not grant undergraduate degrees) who work in industrial enterprises and design organizations were first included by the Soviets in the scientific worker category in 1962, apparently as a result of a major reclassification of scientific activities. No definitional changes have been noted since that time.[1]

All ministries and departments maintain central files consisting of records on every employed person to whom the Ministry of Higher and Specialized Secondary Education has granted a graduate degree and/or awarded an academic title. In addition, some persons without degree or title (but usually with diploma) are employed in scientific research. The responsible administrative organizations submit an annual summary report on scientific workers to the Cultural Statistics Department of the Central Statistical Administration (TsSU).[2] The information in these reports forms the basis for the data published in the Soviet statistical handbooks.[3]

Soviet statistics include practically all fields of knowledge and investigation under the classification of science. Thus, the figure given for all Soviet scientific workers in 1968—822,900—includes specialists in a number of disciplines, such as law and art, not usually considered as scientific fields in the United States.[1] Because of the differences in definition and practice between US and Soviet statisticians, categories of Soviet scientific workers have

Table 2. Number of Soviet Scientists

Specialties	1958	1959	1960	1961	1962	1963	1964	1965
Physics and mathematics	22.6	24.8	29.0	35.1	48.3	54.9	58.2	63.9
Chemistry	20.2	22.7	26.2	32.3	25.4	28.8	31.6	33.5
Biology	13.2	13.6	15.1	16.2	21.6	23.9	25.7	27.1
Geology and mineralogy	8.2	9.0	10.7	12.0	13.4	15.1	15.4	16.4
Agriculture and veterinary sciences	18.6	20.2	21.2	23.8	25.5	28.0	29.1	30.6
Geography	3.8	3.9	4.3	4.6	5.2	5.4	5.6	5.9
Medical and pharmaceutical sciences	29.7	31.0	32.2	34.2	33.5	34.6	35.1	36.7
Cumulative total	116.3	125.2	138.7	158.2	172.9	190.7	200.7	214.1

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been selected for comparison with the categories of US specialists usually regarded as scientific.

The number of scientists* in the USSR for the 1958-1968 period is shown in table 2. Projections of the number of scientists through 1975 are also shown in this table.[1 4 5] The table includes the number of scientists by specialty, as well as the cumulative total number of scientists. The medical sciences specialty includes those who have completed a clinical residency, have been awarded the degree of Candidate or Doctor of Medical Sciences, and are engaged in scientific research or teaching.

Not included in this report because in the United States they are usually counted in other professional fields, but listed in the Soviet statistics as "scientific workers," are specialists in such disciplines as architecture, history and philosophy, economics, philology, law, pedagogy, and art.[1 6] The Soviets also include as scientific workers a large category (over 360,000 personnel in 1968) known as technical, or engineering, scientists[6] because they engage in research and development, academic affairs, or related work.** These specialists have not been counted as scientists in this report, but they have been covered as engineers in a separate report based largely on the cumulative number of annual engineering graduates, published in September 1969.

Other personnel who have not been counted as scientists are the Soviet and US teachers of science in primary and secondary schools. In both countries these personnel are considered to be teachers, not scientists. On the other hand, in both countries, academic personnel in the scientific disciplines, as specified in this report, in higher educational establishments are considered as scientists, not educators, for statistical purposes.

Also not counted in this report are subprofessional personnel. In 1964 there were about 2⅓ additional workers for each Soviet scientist.[7] Currently it is estimated that these subprofessionals may reach as high as about 3 for each scientist in some specialties.

The projection* through 1975 of Soviet scientific manpower, as well as the figures for the 1958-1968 period, is based largely on the published Soviet data, but other pertinent information has been considered.[1 8-10] It is obvious from an examination of the data that over a period of years there has been essentially a linear rate of growth in each of the specialties. According to this projection, the Soviets will have about 293,000 scientists in 1970 and about 369,000 in 1975.

In contrast to the 369,000 Soviet scientists projected for 1975, the US Bureau of Labor Statistics[11] has projected 594,000 US scientists for the same year, or 225,000 more US scientists than Soviet scientists. The US superiority in numbers of scientists appears to be growing and no significant change in that trend seems likely through 1975 in

*Official Soviet annual statistical reports on the number of engineers, physicians, and veterinarians in the USSR specifically state that members of the armed forces are not included. Soviet reports on the number of scientific workers in the USSR do not specify whether members of the armed forces are included, but it is assumed that they are not and that the number in the armed forces is relatively small.

**Many of these "technical scientists" hold engineering degrees. Others have no degrees but are employed in technical support work in design and industrial establishments and are more closely related to the engineering than to the scientific profession.

*Projections derived for this paper have been obtained using regression techniques similar to those used by the US Bureau of the Census.

by Specialty (thousands), 1958-1975

1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	Numerical Increase 1968–1975	Percent Increase 1968–1975
70.8	77.1	83.0	88.7	94.3	100.0	105.7	111.4	117.0	122.7	39.7	47.8
36.7	39.0	41.7	44.4	47.0	49.7	54.4	55.1	57.7	60.4	18.7	44.8
29.8	31.8	34.1	36.1	38.1	40.1	42.2	44.2	46.2	48.2	14.1	41.3
17.5	18.4	19.3	20.5	21.7	22.9	24.1	25.3	26.5	27.7	8.4	43.5
31.7	31.9	33.3	35.0	36.7	38.4	40.1	41.8	43.5	45.2	11.9	35.7
6.1	6.3	6.6	6.8	7.1	7.3	7.5	7.7	8.0	8.2	1.6	24.2
39.3	41.5	44.6	46.3	47.9	49.6	51.2	52.9	54.5	56.2	11.6	26.0
231.9	246.0	262.6	277.8	292.8	308.0	323.2	338.4	353.4	368.6	106.0	40.4

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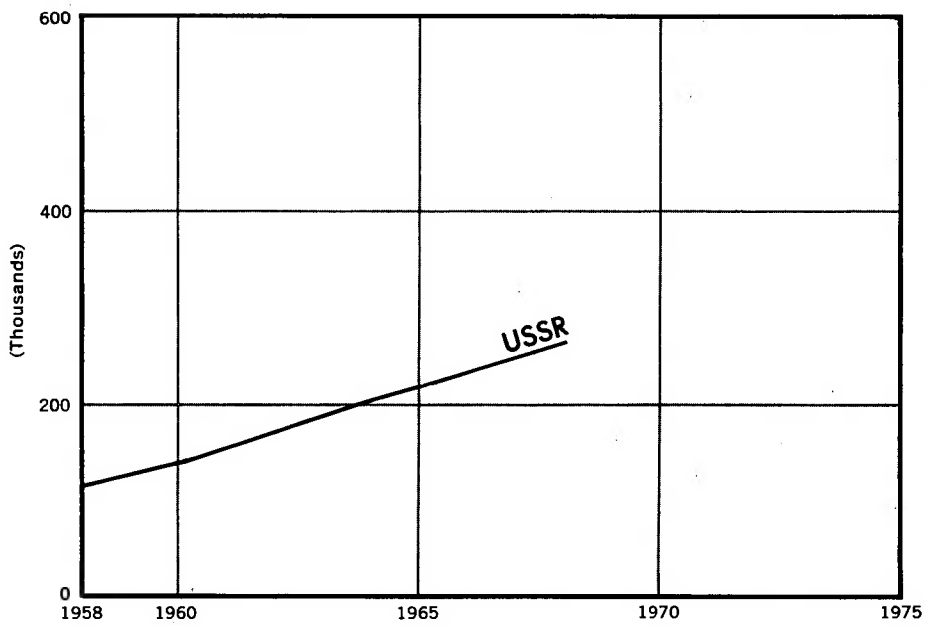

Figure 1. Total Soviet Scientists Through 1975

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spite of the greater projected percentage increase in the numbers of Soviet scientists, as shown by a comparison of the totals (see figure 1 and tables 2 and 3). Projections (table 2) indicate that in the USSR in 1970 physicists and mathematicians constitute the largest number of scientists; medical and pharmaceutical scientists are next, followed by chemists, biologists, agricultural and veterinary scientists, geologists and mineralogists, and finally geographers. In 1975 the chemists will move into second place. In the United States (table 3) at that time the chemists are projected to be in first place and the physicists and mathematicians second.

The projected percentage expansion of each of the Soviet categories between 1968 and 1975 (table 2) shows that the physicists and mathematicians will experience the greatest increase, followed by chemists, geologists and mineralogists, biologists, agricultural and veterinary scientists, medical and pharmaceutical scientists, and finally by geographers. Table 3 shows US figures for similar categories.

SOVIET AWARDS OF ADVANCED DEGREES IN THE SCIENCES

the Soviet candidate of sciences degree may be considered about equivalent to a US Ph.D. and a Soviet doctor of sciences degree may be compared with a US Ph.D. degree held by a mature scientist recognized for some original scientific contribution beyond and in addition to work for the degree. In most cases the granting of the candidate degree results after a successful defense of a dissertation which may come at the end of a formal 3-year program of graduate work. By requirements and tradition the Soviet doctoral degree is reserved for mature scholars most of whom are over 40 years of age.[2] [12]

The number of advanced science degrees awarded in the USSR in the 1958-1968 period is shown in table 4;[1] the number of these degrees has been projected through 1975 as shown in figure 2. The scientific specialties are the same as those shown in table 2. Scientists holding these degrees are of vital importance to the advancement of the Soviet economy and military base.[13] [14]

The projections indicate that the total number of advanced degrees held in the medical and pharmaceutical sciences are and will continue through 1975 to be greater than that of any other specialty, followed by the physics and mathematics specialty. The specialty ranking, according to percentage increases from 1968 through 1975, is as follows: phys-

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Table 3
Number of US Scientists by Specialty (thousands), 1968-1975

Specialties	1968	1969	1970	1971	1972	1973	1974	1975	Numerical Increase 1968–1975	Percent Increase 1968–1975
Physics and mathematics	108.6	114.2	119.8	125.4	131.0	136.6	142.2	147.8	39.2	36.1
Chemistry	127.7	133.6	139.6	145.5	151.4	157.3	163.2	169.2	41.5	32.5
Biology	65.1	68.5	71.9	75.3	78.8	82.1	85.6	89.0	23.9	36.7
Geology and mineralogy	26.0	26.4	26.7	27.1	27.4	27.8	28.1	28.5	2.5	9.6
Agriculture and veterinary sciences	78.6	80.0	81.4	82.8	84.3	85.7	87.1	88.5	9.9	12.6
Geography	3.9	4.0	4.1	4.2	4.4	4.5	4.6	4.7	0.8	20.5
Medical and pharmaceutical sciences	53.0	55.0	56.9	58.9	60.9	62.9	64.8	66.8	13.8	26.0
Cumulative total	462.9	481.7	500.4	519.2	538.7	556.9	575.6	594.5	131.6	28.4

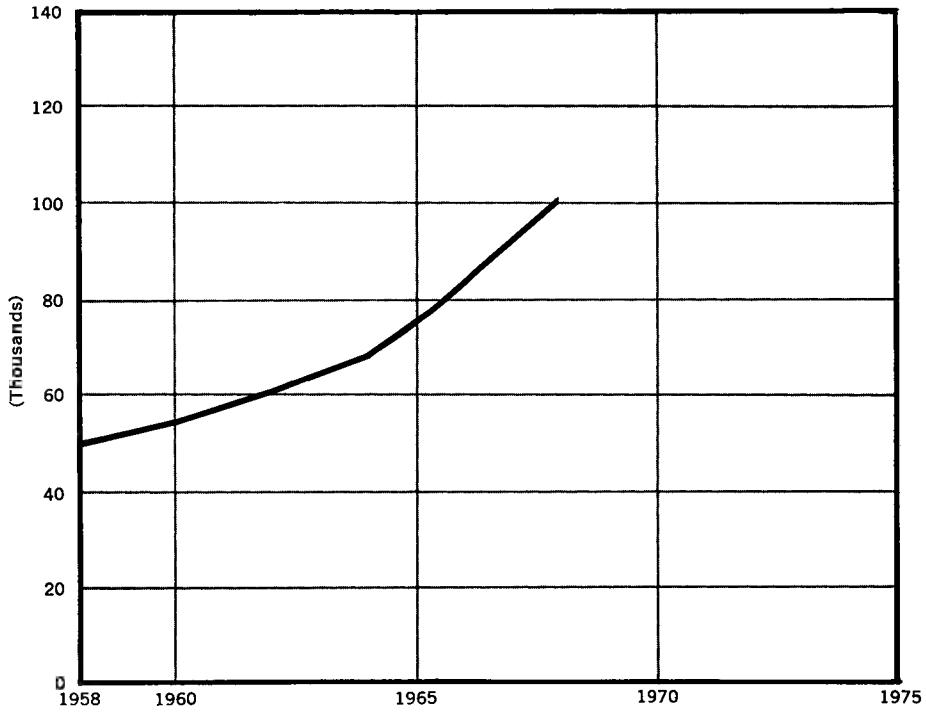

Figure 2. Soviet Advanced Degrees in Science, 1958-75

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ics and mathematics, biology, geology and mineralogy, chemistry, agricultural and veterinary sciences, geography, and medical and pharmaceutical sciences. The data indicate that in 1968 12,286, or about 5%, of the scientists held doctorates and 88,886, or about 34%, held candidate degrees. By 1975 little percentage change is expected, with approximately 17,100, or about 5%, of the scientists holding doctorates and 123,500, or about 33%, holding candidate degrees. As projected, the largest number of doctorates for 1975 should be in the medical and pharmaceutical specialty, followed by the physics and mathematics specialty. In the same year, the specialty with the largest number of candidate degrees should be the medical and pharmaceutical specialty, followed closely by the physics

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Table 4
Soviet Advanced Degrees in Science, 1958-1975

Fields	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
Physics and mathematics: total	6,775	7,220	7,804	8,261	10,003	10,897	12,353	13,788	15,932	18,074
Doctor	914	958	990	1,082	1,246	1,331	1,494	1,637	1,836	2,034
Candidate	5,861	6,262	6,814	7,209	8,757	9,566	10,859	12,151	14,096	16,040
Chemistry: total	5,847	6,171	6,347	6,615	6,724	6,973	7,736	8,475	9,716	10,956
Doctor	648	682	695	720	745	771	814	843	950	1,056
Candidate	5,199	5,489	5,652	5,895	5,979	6,202	6,922	7,632	8,766	9,900
Biology: total	7,332	7,520	7,937	8,262	9,986	10,674	11,418	12,204	13,743	15,281
Doctor	1,051	1,068	1,133	1,137	1,392	1,468	1,544	1,647	1,838	2,028
Candidate	6,281	6,452	6,804	7,125	8,594	9,206	9,874	10,557	11,905	13,253
Geology and mineralogy: total	3,182	3,384	3,607	3,786	3,998	4,378	4,803	5,247	5,968	6,688
Doctor	530	563	591	602	634	582	724	763	818	873
Candidate	2,654	2,821	3,016	3,184	3,364	3,696	4,079	4,484	5,150	5,815
Agriculture and veterinary sciences: total	7,890	8,110	8,375	8,721	8,738	9,407	9,628	10,320	11,446	12,571
Doctor	800	798	825	863	864	940	971	1,012	1,094	1,175
Candidate	7,090	7,312	7,550	7,858	7,874	8,467	8,657	9,308	10,352	11,396
Geography: total	1,600	1,700	1,761	1,785	1,877	2,003	2,003	2,185	2,334	2,482
Doctor	160	153	167	160	192	212	221	243	266	288
Candidate	1,440	1,547	1,594	1,625	1,685	1,791	1,812	1,942	2,068	2,194
Medical and pharmaceutical sciences: total	17,119	17,822	18,455	19,253	18,552	19,145	19,805	21,452	23,867	26,281
Doctor	2,897	2,882	2,852	2,986	2,835	2,906	3,012	3,204	3,517	3,830
Candidate	14,222	14,940	15,603	16,267	15,717	16,239	16,793	18,248	20,350	22,451
Cumulative totals, all specialties	49,747	51,927	54,286	56,683	59,878	63,477	67,776	73,671	83,006	92,333
Doctor	7,000	7,104	7,253	7,520	7,908	8,310	8,780	9,349	10,319	11,284
Candidate	42,747	44,823	47,033	49,163	51,970	55,167	50,996	64,322	72,687	81,049

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Table 4 (Continued)
Soviet Advanced Degrees in Science, 1958-1975

Fields	1968	1969	1970	1971	1972	1973	1974	1975	Percentage Increase 1968–1975
Physics and mathematics: total	20,247	21,800	23,500	25,000	26,700	28,200	29,900	31,500	55.4
Doctor	2,247	2,400	2,600	2,700	2,900	3,000	3,200	3,400	49.9
Candidate	18,000	19,400	20,900	22,300	23,800	25,200	26,700	28,100	56.1
Chemistry: total	11,994	12,700	13,400	14,200	15,000	15,700	16,500	17,200	43.5
Doctor	1,138	1,200	1,200	1,300	1,400	1,400	1,500	1,500	33.8
Candidate	10,856	11,500	12,200	12,900	13,600	14,300	15,000	15,700	44.5
Biology: total	16,600	17,700	18,800	19,900	21,000	22,200	23,200	24,400	46.7
Doctor	2,200	2,300	2,500	2,600	2,700	2,900	3,000	3,200	43.5
Candidate	14,400	15,400	16,300	17,300	18,300	19,300	20,200	21,200	47.2
Geology and mineralogy: total	7,442	7,900	8,400	8,900	9,400	9,900	10,400	10,900	46.0
Doctor	942	1,000	1,000	1,100	1,100	1,200	1,200	1,300	34.0
Candidate	6,500	6,900	7,400	7,800	8,300	8,700	9,200	9,600	47.7
Agriculture and veterinary sciences: total	13,656	14,400	15,200	15,900	16,800	17,600	18,300	19,100	39.7
Doctor	1,256	1,300	1,400	1,400	1,500	1,600	1,600	1,700	34.1
Candidate	12,400	13,100	13,800	14,500	15,300	16,000	16,700	17,400	40.3
Geography: total	2,633	2,700	2,800	2,900	3,000	3,100	3,200	3,200	22.8
Doctor	303	317	300	300	400	400	400	400	33.3
Candidate	2,330	2,400	2,500	2,500	2,600	2,700	2,800	2,800	21.4
Medical and pharmaceutical sciences: total	28,600	29,400	30,200	31,000	32,000	32,800	33,600	34,400	20.3
Doctor	4,200	4,400	4,600	4,800	5,100	5,300	5,500	5,700	35.7
Candidate	24,400	25,000	25,600	26,200	26,900	27,500	28,100	28,700	17.7
Cumulative totals, all specialties	101,172	106,800	112,300	117,900	124,900	129,500	135,100	140,600	39.0
Doctor	12,286	13,000	13,600	14,300	15,100	15,800	16,400	17,100	39.2
Candidate	88,886	93,800	98,700	103,600	108,800	113,700	118,700	123,500	39.0

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and mathematics specialty. The chemical specialty should rank thirk in both doctorate and candidate degrees.

NUMBER OF SOVIET PHYSICIANS AND VETERINARIANS

The number of physicians (practicing, research, and teaching—including those holding advanced academic degrees) in the civilian economy of the USSR for the 1955-1968 period [1] [15] is shown in table 5; the number of these physicians has been projected through 1975, as shown in figure 3. The table gives the number by category and also the cumulative total number of physicians. The medical categories follow official Soviet statistical reporting.

Physicians, as defined in Soviet sources, are persons who hold diplomas certifying that they have successfully completed the prescribed course of study at a medical institute or facility and awarding them the professional title of physician. The dentists listed in this report are those who have received physician-level training.

Records maintained by the agencies that administer health services contain data on the employment of physicians. Annual reports are prepared by local administrative agencies and submitted to superior agencies for consolidation.[16] The numbers of scientific workers in medicine/pharmacology given in table 2 differ from the total numbers of physicians given in table 5 by definition and coverage.

Projections indicate that there would be a total of 769,800 physicians in 1975; however, Soviet data are available for the numbers of physicians planned for the years 1970 and 1975, 685,000 and 840,000 respectively.[17] [18] These figures probably are indicative of plans to step up the yearly production of physicians in the USSR after 1968. Since Soviet plans of this nature are usually a fairly accurate forecast of what the data will actually be a few years later, the planned numbers were used and values for the intervening years adjusted accordingly.

In contrast to the 840,000 Soviet physicians (3.3 per thousand population) expected by 1975, the US Bureau of Labor Statistics has projected 503,000 physicians (2.3 per thousand population) of comparable types for the United States,[11] or about 0.6 times as many US as Soviet physicians. In 1968 the Soviets had 617,800 physicians (2.6 per thousand population), as contrasted with 395,000* (2.0 per thousand population) in the United States according

*This figure includes 100,000 US dentists.

Table 5. Number of Soviet Physicians

Categories	1955	1956	1957	1958	1959	1960	1961	1962	1963
General medicine	78.0	84.5	87.2	89.3	92.7	96.2	100.4	104.3	107.3
Surgery	32.4	33.9	35.0	36.4	37.7	40.5	42.9	45.4	47.6
Obstetrics and gynecology	23.7	24.3	25.1	26.2	27.4	28.7	30.0	31.7	32.7
Pediatrics	44.1	46.2	48.8	51.7	55.0	58.9	62.2	64.9	67.1
Ophthalmology and otolaryngology	15.5	16.2	17.0	17.7	18.8	20.1	21.4	22.6	23.5
Neurology and neurosurgery	7.6	7.9	8.5	9.2	9.9	10.5	11.4	12.2	12.8
Psychiatry	4.8	4.8	5.4	5.8	6.1	6.4	7.1	7.9	8.6
Pulmonary diseases	13.2	14.0	14.8	15.5	16.0	16.5	17.4	18.4	19.5
Dermatology and venereology	9.8	9.7	9.4	9.3	9.3	9.4	9.5	9.6	9.7
Radiology	10.7	11.8	12.9	13.9	14.8	15.7	17.1	18.2	19.0
Physical medicine and rehabilitation	1.5	1.6	1.6	1.6	1.6	1.6	1.7	1.8	1.9
Epidemiology and environmental health	27.8	27.8	27.9	27.9	29.2	31.5	32.9	33.7	34.2
Stomatology	12.5	12.8	13.6	14.0	15.2	16.2	17.3	18.5	20.2
Dentistry	23.6	25.0	26.2	26.8	28.5	30.1	32.4	34.7	37.3
Miscellaneous	28.7	33.7	38.7	43.0	46.0	49.5	54.5	55.9	59.4
Cumulative totals	333.9	353.7	372.1	388.3	408.2	431.8	458.2	479.8	500.9

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to the bureau, or about 0.6 times as many US physicians, thus indicating little change in trends in the two countries between 1968 and 1975.

As would be expected, general medicine in the USSR will continue to be the largest category through 1975, followed by pediatrics, surgery, and dentistry. No comparisons by category have been made with projections on US physicians because of the apparent incompatibility of medical categorization by the two countries.*

The total number of veterinarians (practicing, research, and teaching—including those holding advanced academic degrees) in the USSR by years for the period 1960 through 1968,[19] has been reported by the Soviets as follows:

1960	42,040	1965	42,040
1961	42,040	1966	65,000
1962	42,040	1967	65,000
1963	42,000	1968	70,000
1964	42,500		

The relatively large value of 65,000 for 1966 probably resulted because the figures for 1960 through 1965 were reported repeatedly without verification and were finally brought up to date in 1966. Therefore, the values for the number of Soviet veterinarians have been estimated on the basis of an assumed straight-line relationship between 1960 and 1966 and between 1966 and 1968. Since the trend in the number of Soviet veterinarians between 1960 and 1966 appears to be less meaningful than the trend from 1966 to 1968, the latter trend—an increase of 2,500 each year—has been projected through 1975 (see table 6 and figure 4). Thus the Soviets will probably have about 87,500 veterinarians by 1975. In the same year, the US will have about 26,300 or 0.3 as many veterinarians of comparable types. The 1975 US value was obtained by projection of data for the period 1960 through 1968.[20] Soviet and US values for 1968 and 1975 indicate that the number of Soviet veterinarians will increase 25% and US veterinarians will increase 14% during the period. US authorities have indicated that the large number of Soviet veterinarians is not surprising in view of the rising emphasis on agriculture, including livestock, and dairy production. The considerable increase in Soviet veterinarians is consistent with a 50% increase in livestock in approximately 10 years, as compared with a 7% increase in North America for the same period.[19]

*The World Health Organization presents only the total number of physicians by country in their statistical compilations, because "all countries do not use the same terminology for their specialties."

by Category (thousands), 1955-1975

1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	Percent increase 1968–1975
111.9	114.9	118.4	121.2	125.6	131.2	137.0	142.3	147.8	153.2	158.5	163.9	30.5
50.4	52.5	55.1	58.0	60.2	63.7	67.4	70.8	74.2	77.7	81.1	84.7	40.7
34.4	35.4	36.3	37.4	38.5	40.3	42.4	44.1	46.0	47.8	49.7	51.5	33.8
70.2	71.7	73.6	74.9	74.8	78.8	81.3	83.2	85.1	86.4	88.0	89.0	19.0
24.9	25.9	27.1	28.6	29.7	31.3	32.9	34.6	35.9	37.4	39.0	40.6	36.7
13.7	14.3	15.2	15.8	16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5	42.4
9.2	10.1	10.8	11.6	12.5	13.4	14.5	15.4	16.3	17.2	18.3	19.2	53.6
20.7	21.6	22.4	22.8	23.1	24.4	25.8	27.2	28.6	30.0	31.2	32.6	41.1
10.1	10.3	10.5	10.9	11.3	12.0	12.7	13.5	14.3	15.1	16.0	17.0	50.4
20.1	20.9	21.7	22.4	23.0	24.5	25.9	27.4	28.8	30.3	31.7	33.2	44.3
2.1	2.2	2.3	2.5	2.6	2.7	3.0	3.1	3.3	3.4	3.7	3.8	46.2
35.7	36.3	37.5	38.1	38.7	40.3	42.2	43.7	45.3	46.9	48.5	50.1	29.5
22.9	25.5	28.3	30.9	33.7	35.5	37.2	39.0	40.6	42.4	44.1	45.8	35.9
41.8	43.7	46.1	47.8	49.8	52.7	55.7	58.6	61.5	64.4	67.2	70.2	41.0
64.0	68.0	72.4	75.3	77.8	83.0	88.5	93.7	98.9	104.2	109.6	114.9	47.7
532.1	554.2	577.7	598.2	617.8	651.3	685.0	716.1	747.1	777.9	809.2	840.0	36.0

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Table 6

Total Soviet and US Practicing Veterinarians (thousands), 1960-1975

Year	USSR	US
1960	42.0	20.1
1961	45.9	20.1
1962	49.7	20.1
1963	53.5	22.0
1964	57.3	21.8
1965	61.2	21.5
1966	65.0	23.0
1967	67.5	23.0
1968	70.0	23.0
1969	72.5	23.5
1970	75.0	23.9
1971	77.5	24.4
1972	80.0	24.9
1973	82.5	25.4
1974	85.0	25.8
1975	87.5	26.3
Percent increase 1968-1975	25.0	14.0

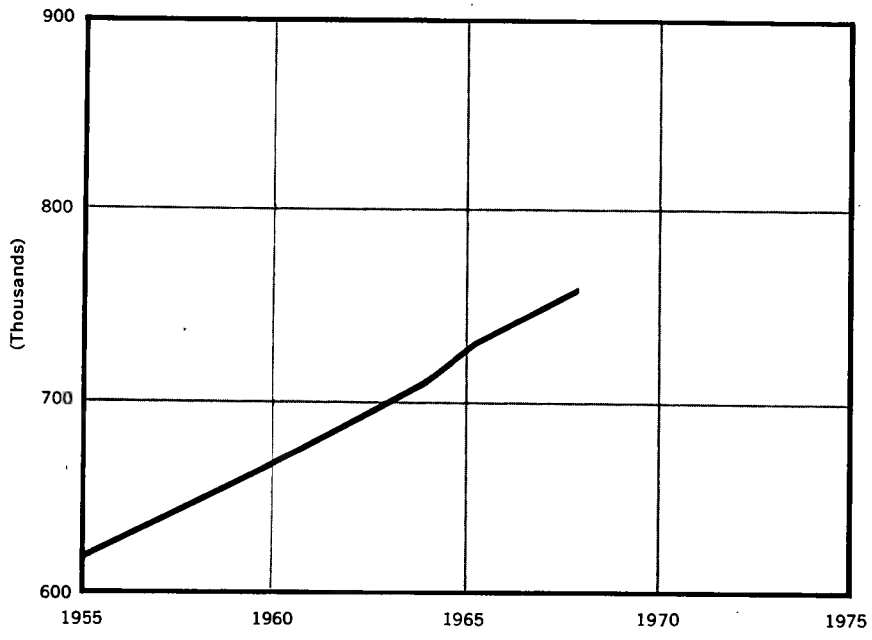

Figure 3. Total Soviet Physicians, 1955-75

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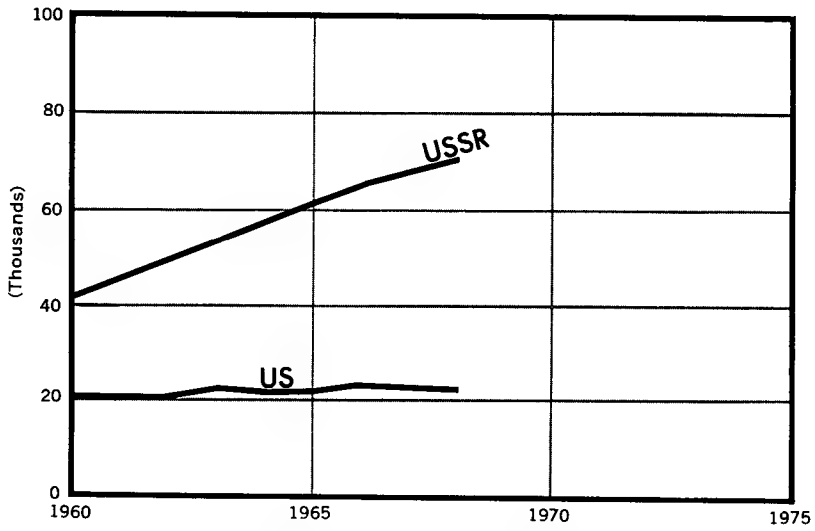

Figure 4. Total Soviet and US Practicing Veterinarians, 1960-75

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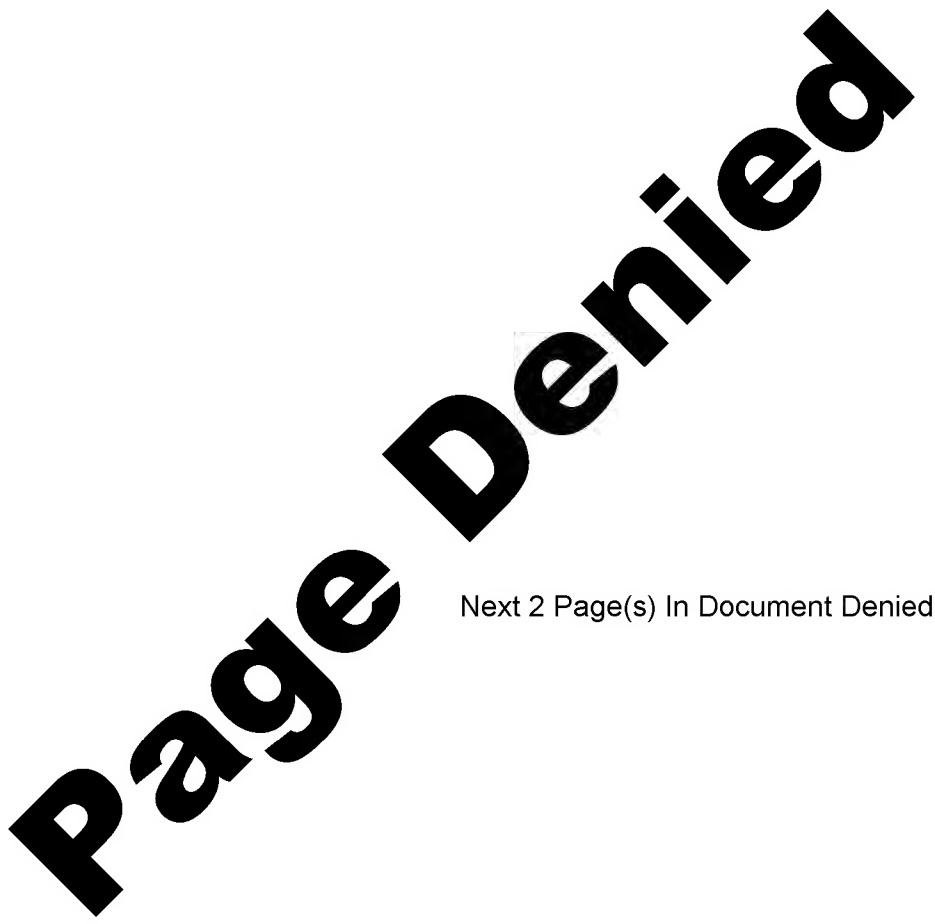

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